No. 836,277. PATENTED NOV. 20, 1906.

I. A. PERJUE.

MOLDING MECHANISM.

APPLICATION FILED JAN. 24, 1906.

4 SHEETS—SHEET 1.

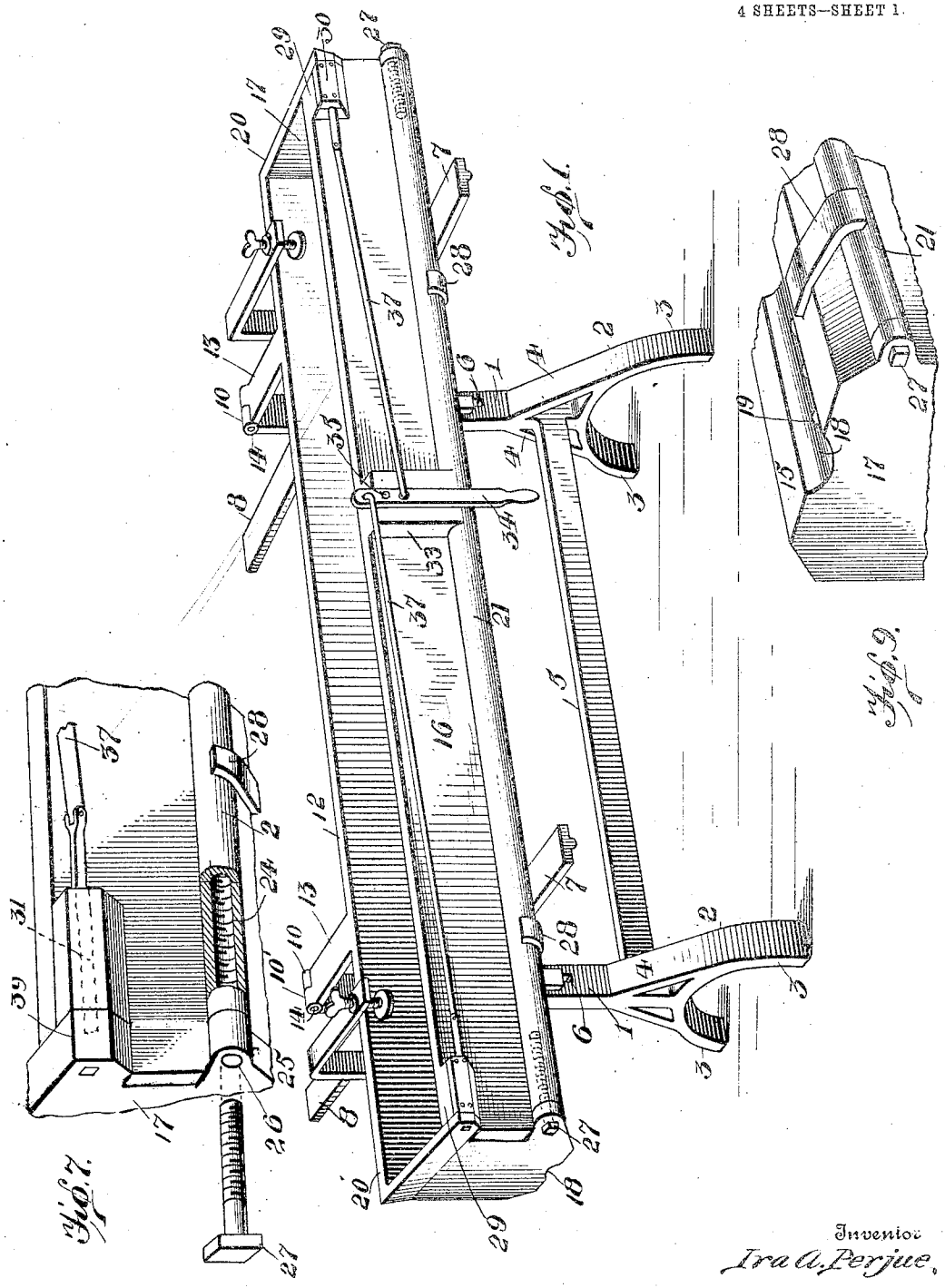


Fig. 1.

Fig. 2.

Fig. 7.

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4 SHEETS—SHEET 2.

Fig. 2.

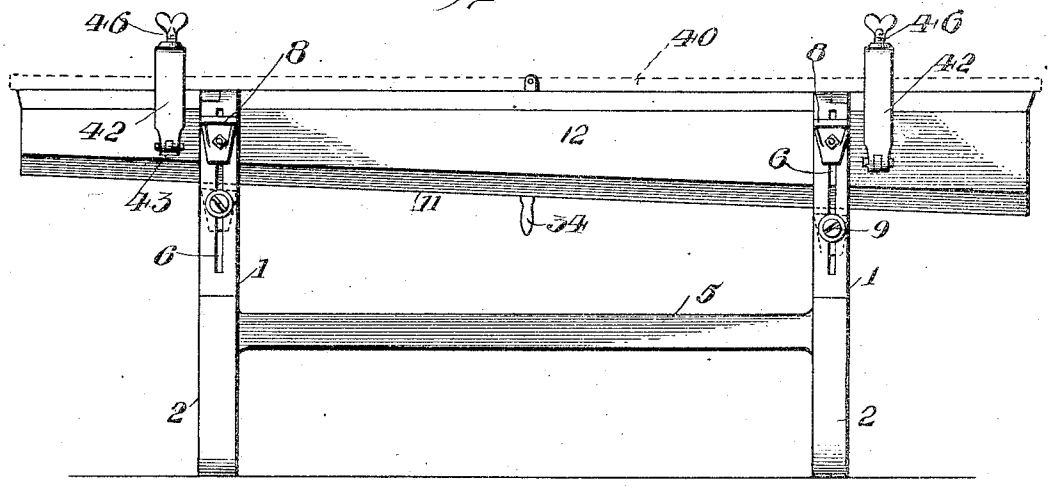


Fig. 3.

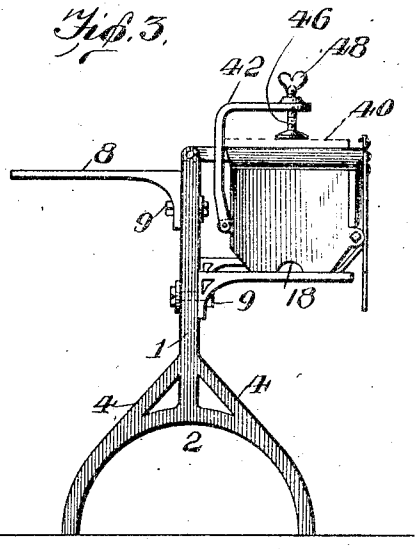
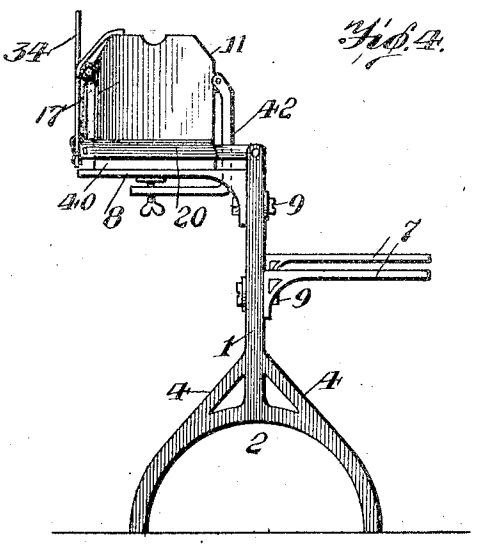


Fig. 4.



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4 SHEETS—SHEET 3.

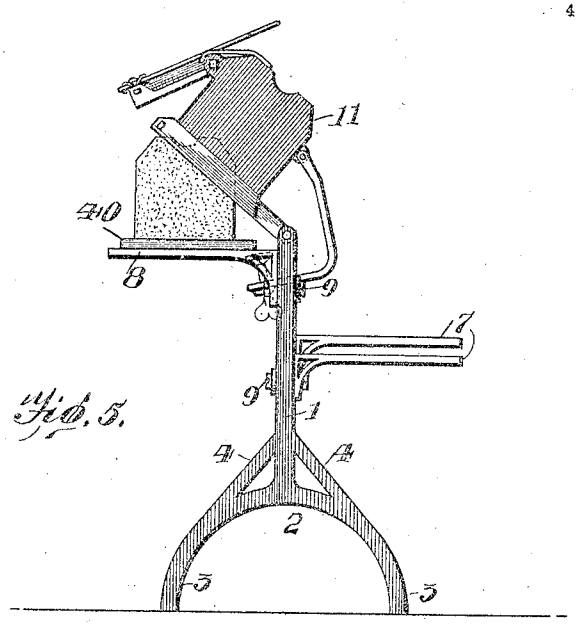


Fig. 5.

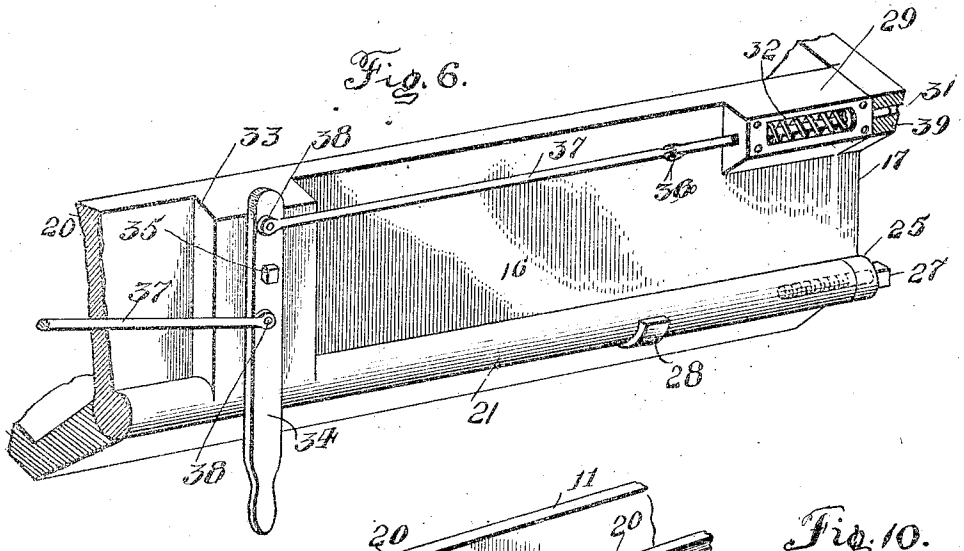


Fig. 6.

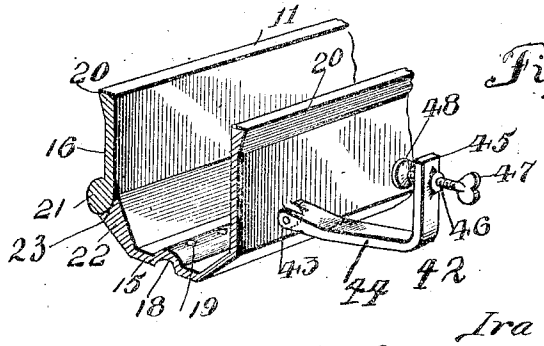


Fig. 10.

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4 SHEETS—SHEET 4.

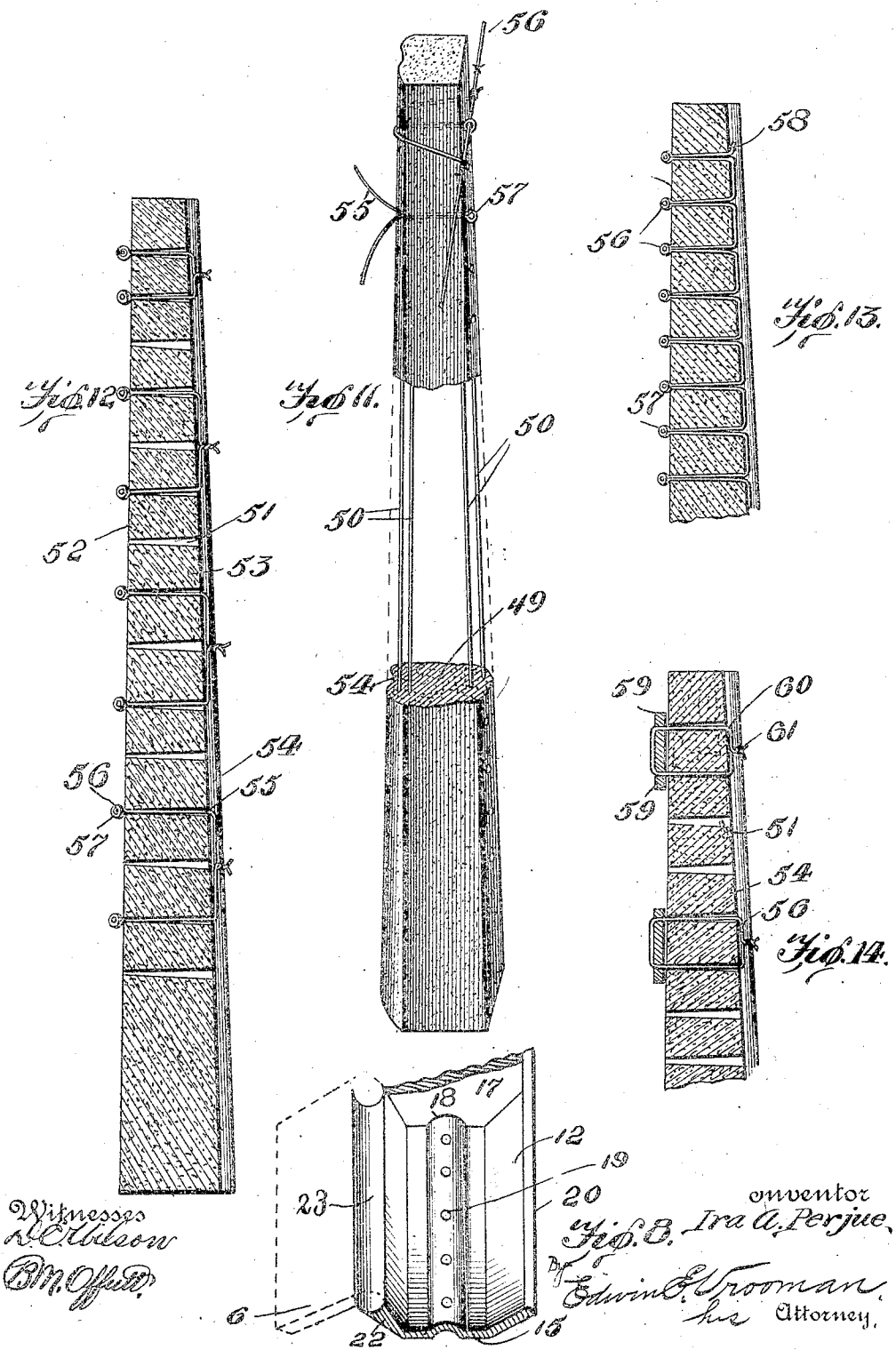


Fig. 11.

Fig. 12.

Fig. 13.

Fig. 14.

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UNITED STATES PATENT OFFICE.

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MOLDING MECHANISM.

No. 836,277. Specification of Letters Patent. Patented Nov. 20, 1906.

Application filed January 24, 1906. Serial No. 297,703.

To all whom it may concern:

Be it known that I, IRA A. PERJUE, a citizen of the United States, residing at Milton, in the county of Van Buren and State of Iowa, have invented new and useful Improvements in Molding Mechanisms, of which the following is a specification.

This invention relates to improvements in molding mechanisms, and particularly to a plastic molding mechanism for forming artificial stone.

The object of the invention is the provision of means for molding a post or analogous article from plastic material.

With this and other objects in view, the invention consists of certain other novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings, Figure 1 is a perspective view of a mechanism constructed in accordance with the present invention. Fig. 2 is a rear view in elevation. Fig. 3 is a view in end elevation showing the mold in an upright position, and Fig. 4 is a similar view showing the mold in a dumped or inverted position. Fig. 5 is an end view in elevation showing the mold raised off of the pallet and the molded post or article upon the pallet. Fig. 6 is a fragmentary perspective view of the mold. Fig. 7 is a fragmentary perspective view of the mold, showing in detail the fastening means for securing the door or hinged section to the ends. Fig. 8 is a fragmentary perspective view of the mold, showing the longitudinally-extending concaved or grooved portion, within which the lower portion of the door or hinged section is positioned. Fig. 9 is a detail fragmentary inverted perspective view of the mold, showing one of the lugs which is employed for strengthening the door or hinged section. Fig. 10 is a detail fragmentary perspective view of the mold and one of the pallet holders or clamps. Fig. 11 is a perspective view, partly in section, of a post formed by a mechanism constructed in accordance with the present invention. Fig. 12 is a longitudinal sectional view of a post constructed in accordance with the present invention and showing peculiarly-constructed fastening means for securing wires or strands in position. Fig. 13 is a fragmentary longitudinal sectional view of a post constructed in accordance with the present invention and showing another embodiment of the fastening means; and Fig. 14 is a similar view of the post, showing another embodiment of the fastening means for securing a board to a post.

Referring to the drawings by reference-numerals, 1 1 designate the standards or uprights of the support or framework of the mechanism. Each upright is preferably integral with a base 2, which base 2 is preferably curved throughout its length for forming feet 3 3. Inclined braces 4 4 are integral with the base 2 and the standard 1. The standards 1 are connected by a horizontal brace or beam 5. Each standard is provided with a longitudinally-extending slot 6. Positioned upon opposite sides of each of the standards 1 are vertically-adjustable horizontal mold and pallet supporting brackets or holders 7 and 8, respectively. Each of the brackets 7 and 8 is similarly constructed and is also similarly secured to a standard 1. Each bracket comprises a horizontal body provided with a vertical portion extending at right angles to said body. The vertical portion of the bracket is apertured for receiving any ordinary fastening means—as, for instance, a bolt-and-nut structure 9—for securing the bracket in an adjusted position. The brackets 7 and 8 are adjustable substantially the entire length of the standards 1, and this adjustability of said brackets is desirable, for the reason that different-sized molds may be used upon the support constituted by the standards 1, and it is desirable to adjust the brackets 8 for accommodating pallets of different thicknesses.

The upper end of each of the standards 1 is provided with a horizontal apertured stud or lug 10. A mold or matrix 11 is provided upon the upper portion of its rear side or wall 12 with preferably a pair of horizontal arms 13. These arms 13 are flush with the upper horizontal edges of the mold, and upon the outer end of each of these arms there is formed a horizontal apertured extension or lug 10'. Suitable fastening means—as, for instance, a pin or pintle 14—is positioned within the apertured portions of the lugs 10 and 10' for securing the arms 13 to the standards 1. The mold 11 comprises the rear side

or wall 12, bottom 15, hinged door or section 16, and ends 17. The bottom 15 is longitudinally inwardly bulged or depressed, as at 18, and in the bulged portion 18 of the bottom 15 alined apertures 19 are formed. These apertures 19 are provided for permitting the insertion of an implement for forming apertures in the post or molded article while said post is in a green or wet state.

The door or hinged section 16 is provided at its upper longitudinal edge with a reinforcing rib or bead 20, which is also true of the ends 17 and the rear side 16. This strengthening-rib 20 materially increases the strength of the mold-body. Formed upon the lower longitudinal edge of the hinged section 16 is a cylindrical portion 21, which is preferably solid. This cylindrical portion 21 of the hinged section constitutes a portion of the hinge for the same. The portion 22, Figs. 8 and 10, is provided with a concaved groove 23, within which is seated the cylindrical portion 21 of the hinged section 16. Near each end of the cylindrical portion 21 of the door 16 an internally-threaded socket 24 is formed, Fig. 7. Each of the ends 17 is provided with a lug 25, which lug 25 is provided with an aperture 26. Threaded bolts 27, which are provided with unthreaded portions near their heads, are threaded into the recesses 24. The hinged section 16 is only secured to ends 17 by means of the threaded structure 24 of the cylindrical portion 21 and the bolts 27. The cylindrical portion 21 is braced intermediate its ends by means of reinforcing or strengthening lugs 28, Figs. 1 and 9. Each of these strengthening-lugs 28 is preferably cast upon the bottom of the mold and is provided with a curved outer end, which fits snugly against the periphery of the portion 21. By means of these lugs the hinged section is strengthened intermediate its ends, which is desirable when the plastic material—as, for instance, cement—is in the mold and is being tamped or packed. The peculiar construction of the hinged section or door 16 prevents the hinge from becoming clogged or choked with any foreign substance, as the portion 21, working in the concaved portion 23, Fig. 8, produces a continuous surface exposed upon the inside of the mold whether the section or door 16 is in its closed or opened position.

It is desirable to secure the hinged section 16 in a closed position, and for this reason I have provided a locking device for accomplishing this result. This locking device comprises horizontal housings 29, carried by the ends of the section 16. Each of the housings 29, Figs. 1 and 6, is provided with a removable cap 30, Fig. 1. Within each housing a slidable bolt 31 is positioned. A spring 32 is positioned within each of the housings and upon each of the bolts 31. A vertical central stud 33 is formed integrally upon the outer face of the hinged section 16. A lever 34 is fulcrumed, as at 35, upon the lug or extension 33. Each of the bolts 31 is pivotally connected, as at 36, to a rod 37. The inner ends of the rods 37 are pivotally connected, as at 38, to the lever 34. One of the rods 37 is connected to the lever 34 above its fulcrum 35, while the other rod is connected to said lever below said fulcrum. By swinging the lever 34 upon its fulcrum in the direction of the arrow, Fig. 6, the spring-pressed bolts 31 will be withdrawn from the apertured lugs or studs 39, formed upon the sides 17 of the mold 11. These lugs 39 are formed upon the upper edge of the sides and are provided with apertures registering with apertures formed in the outer ends of the housings when the hinged section is closed. When the spring-pressed bolts are withdrawn from the lugs 39, the section 16 may be swung upon its hinge for permitting the removal of the mold off of the pallet 40, Fig. 5, without injury to the molded article 41. The spring-pressed bolts 31 constitute locking means for securing the hinged section 16 in a closed position, which locking means is actuated by manually-operated lever means.

I employ clamps or holders 42, carried by the mold or matrix 11, for securing the pallet 40 upon the mold while the same is being moved to its dumped position, Fig. 4. In Fig. 4 the hinged section is shown in a closed position, and said clamps and holders 42 are shown in their normal position for holding the pallet 40 against the reinforced edges of the mold 11. Each clamp 42, Fig. 10, is pivoted upon a lug 43, which is formed integral upon the rear side 12 of the mold 11. The clamp is provided with a substantially straight body 44 and a right-angled extension 45. The right-angled extension is provided with a revoluble threaded member or screw 46. The member 46 is provided at its upper end with a suitable grip 47 and at its lower end with a plate 48, which plate 48 is preferably disk-shaped. After the mold has been filled with plastic material and said material tamped the pallet 40 is placed upon the reinforced edges of the mold and the clamps 42 are positioned for placing the horizontal extension or portion 45 parallel with the pallet. The screws are then adjusted for causing the plates 48 to grip the pallet 40 for positively securing the same clamped against the mold until the plates 48 are moved away from said pallet 40 prior to the positioning of the mold in its normal vertical or upright position. It will therefore be seen that the mold is provided with pivotally-mounted clamping means for securing a pallet in position thereon.

In Fig. 5 the clamping means is swung away from the pallet and the section 16 is in

an open position. The mold 11 may be detached from its support by removing the pins or fastening means 14, and another mold of a different size may be positioned upon the support. The horizontal brackets 7 can be quickly adjusted to accommodate a different-sized mold, which is likewise true of the brackets 8 for receiving a pallet that is of different thickness to the one last used. The mold 11 is preferably of greater width at one end than at its opposite end. The body of the mold tapers throughout its entire length for producing tapering posts. (Depicted in Figs. 12 to 14.)

In Figs. 11 to 14 I have shown the structure of a post which is molded by my mechanism. The post comprises a body 49, which is preferably reinforced by longitudinally-extending wires or strands 50. These strands or wires are placed in the body of the mold while the plastic material is being placed therein. Transversely-extending apertures 51 are formed in the post. Each aperture tapers throughout its length and is narrowest at its front or wire-engaging faces 52, while it is widest at the rear face 53. The rear end of the apertures 51 terminates in a longitudinally-extending groove 54. It is to be noted that the bulged portion 18 of the mold produces this longitudinal groove 54 in the post. Within this groove the fastened ends of wires 55 and 56 are positioned, this groove forming a guard or protection of these twisted or fastened ends.

In Figs. 11 and 12 the wire 55 is looped around the strands 56, as at 57, and the wire 55 is drawn taut, thereby clamping the loop 57 at the narrowest end of the tapering aperture.

In Fig. 13 the fastening means for securing the wires 56 to the post comprises a continuous strand 58, which is threaded through each aperture and looped around each wire 56 that is attached to the post. A single wire in this instance constitutes fastening means together with the post, while in Fig. 12 each single wire 55 secures only two strands to the post. It is to be noted that in each of these embodiments the small end of the transverse apertures 51 causes the loop 57 to fit snugly around the strand when the wires or strands which are threaded through the apertures are drawn taut.

In Fig. 14 I have shown fastening means for securing boards 59 to the post. This fastening means comprises a single wire 60, which is threaded through two apertures of the post and the board, and the ends of said wire are twisted or fastened together, as at 61, within the longitudinal groove 54 of the post.

What I claim is—

1. In a mechanism of the class described, the combination of vertical standards, each standard provided with a longitudinal extending slot or aperture, a horizontal, apertured bracket engaging each standard, transverse fastening means positioned within the slotted portion of said standard and engaging said bracket, and a mold secured to said standards and adapted to engage said brackets.

2. In a molding mechanism, the combination with a support, of a mold carried by said support, said mold comprising a body provided with a hinged section, said body provided with a concaved grooved portion, said hinged section provided with a cylindrical portion seated within said concaved portion, said cylindrical portion of the same length as one side of said body, and means for securing said cylindrical portion within said concaved portion.

3. In a molding mechanism, the combination with a support, of a mold carried by said support, said mold comprising a body provided with a hinged section, said hinged section provided with a longitudinally-extending, lower cylindrical edge, said body provided with a longitudinally-extending, concaved portion, the cylindrical edge of the section seated within said concaved portion, reinforcing means formed upon said body and engaging said cylindrical portion of the section intermediate its ends, and means for securing said hinged section in a closed position.

4. In a molding mechanism, the combination with a support, of a mold carried by said support, said mold comprising a back, a bottom, ends, and a hinged side section, apertured lugs formed upon said ends, a portion cylindrical in cross-section formed upon said hinged section, fastening means movably positioned within the apertured portion of said lugs and fixedly secured to said cylindrical portion of said section, and means for securing said hinged section in a closed position.

5. In a molding mechanism, the combination of a mold provided with a hinged section, and a reinforcing-lug integral with said mold and engaging said hinged section.

6. In a molding mechanism, the combination with a support, of a mold carried by said support, said mold provided with a hinged section, a lug formed upon said mold and engaging part of said hinged section, and means for securing said section in a closed position.

7. In a molding mechanism, the combination with a support, of a mold carried by said support, said mold comprising a bottom, a back, and ends, and a hinged section, the hinged section provided with a lower, longitudinal, enlarged portion, means connecting the ends of the enlarged portion to the ends

of the mold, and a reinforcing-lug carried by said mold and engaging the enlarged portion of said section intermediate the ends thereof.

8. In a molding mechanism, the combination with a support, of a mold provided with a hinged section, carried by said support, housings formed upon said section, spring-pressed bolts carried by said housings, lever means, and rods connecting said lever means to said bolts.

9. In a molding mechanism, the combination with a support, of a mold carried by said support, said mold provided with a hinged section, lugs formed upon the ends of said mold, said hinged section provided with an enlarged portion upon its lower, longitudinal extending edge, said enlarged portion provided with internally-threaded recesses, bolts extending through the lugs of said ends and threaded into said internally-threaded recesses for securing said hinged section to the sides of said mold.

10. In a molding mechanism, the combination with a support, of a mold carried by said support, pivotally-mounted clamps carried by said support, said mold provided with a hinged section, and spring-pressed, lever-actuated locking means carried by said section and engaging and extending into the ends of said mold for securing said section in a closed position.

11. In a molding mechanism, the combination with a body, of a hinged section carried thereby, a lever pivotally mounted upon said section, housings formed at the ends of said section, spring-pressed bolts longitudinally movable within said housings, and rods pivotally connected at one end to said lever and at their opposite end to said bolts.

12. In a molding mechanism, the combination with a support, of a body carried by said support, said body provided with a longitudinal grooved portion extending the entire length of one side, a movable section carried by said body, said section provided with an enlarged portion formed upon its lower edge, and of the same length as said grooved portion, said portion cylindrical in cross-section, the portion seated within the longitudinal groove of said body, and fastening means for fixedly securing said section in a closed position upon said body.

13. In a mechanism of the class described, the combination of a body, a hinged section carried by said body, said section provided with an enlarged portion, said portion cylindrical in cross-section, said portion provided with threaded recesses formed only in its ends, fastening means movably mounted within the ends of said body and threaded into the recesses of said enlarged portion, and means for securing said section in a closed position upon said body.

14. In a molding mechanism, the combination of a body provided with a recess, a hinged section carried by said body, said section provided with an enlarged portion extending the entire length of one side of said body, said enlarged portion curved upon its outer surface, the enlarged portion seated within the recess of said body, and fastening means for securing said hinged section in a closed position upon said body.

15. In a molding mechanism, the combination of a body, said body provided with a recess or grooved portion, a movable section, an enlarged portion formed upon said movable section, the enlarged portion seated within the recess of said body, apertured lugs formed upon the ends of said body, bolts movably positioned within the apertured lugs and threaded into the ends of the enlarged portion of said section, and means for securing said section in a closed position upon said body.

16. In a molding mechanism, the combination of a body, a movable section carried by said body, said body provided with an upper and a lower, apertured lug extending from one side and formed upon each end, bolts movably positioned within the lower lugs and threaded into the movable section, housings formed upon said movable section, slidable bolts positioned within said housings and adapted to extend into the upper apertured lugs of the ends, a lever, and rods pivotally connecting said bolts and lever.

17. In a molding mechanism, the combination of a body, a movable section pivotally mounted upon said body, fastening members extending through the ends of said body and fixedly secured to the ends of said section, a curved lug secured to said body and in engagement with said hinged section, and means for securing said hinged section in a closed position upon said body.

18. In a molding mechanism, the combination of a body, a hinged section carried by said body, fastening means extending through the ends of said body and secured to the ends of said hinged section, a reinforcing-lug fixedly secured to said body and engaging the hinged section intermediate its length, and means for fastening said section in a closed position upon said body.

19. In a molding mechanism, the combination with a body, of a movable section provided with an enlarged portion formed upon its lower, longitudinal edge, carried by said body, said enlarged portion provided with an outer, curved surface, fastening members movably mounted upon the ends of said body and fixedly secured to said section, a reinforcing-lug secured to said body near each end and partly surrounding and engaging the enlarged portion of said section, and means for securing said section in a closed position upon said body.

20. In a mechanism of the class described, the combination of a body provided with a longitudinally-extending recess or socket, a movable section pivotally mounted upon said body, said section provided with an enlarged portion formed upon its lower edge, said portion cylindrical in cross-section, the portion seated within the recess of said body, bolts movably mounted upon the ends of said body and threaded into the ends of said cylindrical portion, a reinforcing-lug integral with said body and engaging and partially surrounding said cylindrical portion of the section, and synchronously-actuated locking means carried by said section and normally securing the same in a closed position upon said body.

21. In a molding mechanism the combination with a body, of a movable section pivotally mounted upon said body, housings formed at the ends of said section, plates covering a portion of said housings, bolts positioned within said housings, a manually-operated member carried by said section, and rods pivotally connected to said member and to the inner ends of said bolts, the bolts adapted to engage the ends of said body for securing said section in a closed position thereon.

22. In a molding mechanism, the combination of a body provided with a longitudinally-extending, inwardly-bulged portion, said portion provided with alined apertures, and a movable section formed upon said body.

23. In a molding mechanism, the combination of a body provided with a bulged portion, and said bulged portion provided with alined apertures extending longitudinally thereof.

24. In a molding mechanism, the combination of a body, a movable section carried by said body, said section provided with a vertical lug formed intermediate its ends, a lever pivotally mounted upon said lug near the upper edge of said section, longitudinally-extending housings formed upon said section at its ends, spring-pressed bolts longitudinally movable of said housings and adapted to engage the ends of said body for securing said section in a stationary position thereon, and means pivotally connecting the inner ends of said bolts and said lever upon opposite sides of its pivot-point.

25. In a molding mechanism, the combination of a body, a movable section pivotally mounted upon said body, and a reinforcing-lug fixedly secured at one end to the bottom of said body and its outer end engaging and partially surrounding a portion of said hinged section.

26. In a molding mechanism, the combination of a support, a body carried by said support, a hinged section carried by the front of said body, clamps secured to the back of said body, each of said clamps comprising a comparatively straight back provided with a lower, bifurcated end and with an upper, right-angled portion, a thumb-screw threaded into said right-angled portion, and fastening means for securing said hinged section in an adjusted position upon said body.

27. In a molding mechanism, the combination of a support, said support comprising a pair of standards, each standard provided with longitudinally-extending, elongated apertures, removable brackets positioned upon opposite sides of each standard, removable fastening means extending through the slotted portion of each standard and through a portion of said brackets and normally securing said brackets in an adjusted position, and a mold secured to said standards.

28. In a molding mechanism, the combination with a support, of a mold carried by said support, said mold comprising a body provided with a hinged section, said body provided with a groove extending the entire length of one side thereof, said section provided with an enlarged portion upon its lower edge, said enlarged portion of the same length as and seated within said groove, said groove and enlarged portion forming a self-cleaning hinge upon said body, and means for securing said section in a closed position.

29. In a mechanism of the class described, the combination with a support, of a mold engaged by said support, said mold comprising a body provided with a movable section, said body provided with a groove extending the entire length of one side, the lower edge of said section seated within said groove of the body, and means only at the ends of said body for securing the lower edge of said section within said groove.

30. In a mechanism of the class described, the combination with a support, of a mold carried by said support, said mold comprising a body provided with a movable section, said body provided with a longitudinally-extending groove or socket of the same length as one side thereof, the lower portion of said section seated within said groove, and means for securing said section in a closed position upon said body.

31. In a mechanism of the class described, the combination with a support, of a mold carried by said support, said mold comprising a body provided with a movable section, of a locking mechanism carried entirely by said movable section, said locking mechanism comprising a lever fulcrumed upon said section, spring-pressed bolts secured to said section at its ends, and rods pivotally connected to said bolts and to said lever upon opposite sides of its fulcrum-point.

32. A mold, comprising a body provided with a hinged section, said body provided with a groove, said hinged section provided

with a rounded, lower edge, the edge and groove extending the entire length of one side of said mold, the lower edge of said section seated within said groove, and means securing the ends of said section to said body, the groove and lower, rounded portion of the section of the mold forming a self-cleaning hinge.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

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